

REMARKS

INTRODUCTION

In accordance with the foregoing, claims 11-13 and 24-29 have been cancelled. Claims 1-10 and 18 are pending and under consideration.

CLAIM REJECTIONS

Claims 1-13 and 18 were rejected under 35 USC 103(a) as being unpatentable over Okamoto et al. (US 5,696,744) (hereinafter "Okamoto").

Claims 24-29 were rejected under 35 USC 102(b) as being anticipated by Okamoto.

Okamoto discusses a disk reproducing apparatus having a disk diameter determining function. The background section of Okamota discusses several methods of discriminating the diameter of the optical disk. A first method is a reflection type optical sensor such as a photocoupler is arranged at a position outside of the radius of a smaller optical disk when the optical disk is attached to the motor to discriminate the diameter based on the presence/absence of reflected light. A second method is the diameter is discriminated based on the length of the total recording time recorded on an innermost area of the optical disk called a table of contents (TOC). A third method is the optical disk is driven at a constant torque to discriminate the diameter by counting the activation time required for the number of rotations to reach a predetermined value. A fourth method is the diameter is discriminated by a combination of the second and third methods. Okamoto, 1:37-1:57.

Further in Okamoto, the reproducing head is moved to a position corresponding to the outermost portion of an 8 cm CD and when the light reflected by the CD is present at that position, a discrimination signal representing whether focus control is performed or not is output, so that the disk is determined to be a 12 cm CD when the discrimination signal is outputted and to be an 8 cm CD when no discrimination signal is output. Since the radius of the CD is discriminated by determining whether focus control is performed or not, no cost-increasing extra part is necessary to detect the radius. Okamoto, 3:55-3:67.

Claims 1-5

Claim 1 recites: "...if the detected amount of data recorded on the optical disc is below a reference value, moving a pickup to a periphery area and measuring a focus error; and if the

measured focus error is above a constant value, detecting the optical disc as a certain optical disc type and limiting the operational speed level of the optical disc drive.” As stated in the Office Action, Okamoto does not discuss these operations recited in claim 1. The Examiner relies on Okamoto at 3:54-3:61 as an equivalent to the recited operations. However, 3:54-3:61 of Okamoto only discusses that a disc is determined to be a 12 cm CD when the discrimination signal is outputted and to be an 8 cm CD when no discrimination signal is output. In Okamoto, since the radius of the CD is discriminated by determining whether focus control is performed or not, no cost-increasing extra part is necessary to detect the radius.

In contrast to Okamoto, claim 1 recites a method of detecting an optical disc that is not just confined to an eight or twelve centimeter disc, but also fashion discs such as those shown in Figures 1B, 1C and 1D of the present application. The non-standard configuration of the fashion disc rotating at a high speed, i.e., the same speed of that for a standard disc, causes very serious noise and a failure of a lead-in operation is caused due to a focus drop or an adjustment failure. As such, the reproduction of the fashion disc may cause instability of a conventional optical disc reproducing apparatus.

In contrast to Okamoto, in the method recited in claim 1, if the focus error signal is above a constant value, the optical disc is detected as a certain type and the operational speed level of the optical disc drive can be limited. The drive can store various parameters for driving various types of eight cm fashion discs, such as levels of rotation speed, balance, loop gain, etc. Since fashion discs having various shapes can be accurately detected and optimum driving conditions for the fashion discs, such as speeds, loop gains, etc., can be adequately set, it is possible to prevent conventional instability problems when reproducing fashion discs and, accordingly, customer satisfaction can be improved. In contrast to claim 1, Okamoto only discusses a method of determining if a disc is an eight or twelve cm disc and makes no further discrimination regarding fashion discs using a focus error signal as recited in claim 1. In Okamoto, the only determination is if a focus control is performed or not.

Claims 2-5 depend on claim 1 and therefore believed to be allowable for the foregoing reasons. Further, claims 2-5 recite features that patentably distinguish over Okamoto. For example, claim 4 recites that the certain optical disc type is a fashion disc having a diameter of 8 cm. Fashion discs are not discussed in Okamoto.

Withdrawal of the foregoing rejection is requested.

Claim 6-10

Claim 6 recites: "...if determined as a result of the comparison via the comparison unit that the amount of data recorded on the optical disc is below the reference value, moving a pickup to a periphery area and measuring a focus error, and if the measured focus error is above a constant value, detecting the optical disc as a certain optical disc type." Similar to the argument for claim 1, as stated in the Office Action, Okamoto does not discuss these features recited in claim 6. The Examiner relies on Okamoto at 3:54-3:61 as an equivalent to the recited features. However, 3:54-3:61 of Okamoto only discusses that a disc is determined to be a 12 cm CD when the discrimination signal is outputted and to be an 8 cm CD when no discrimination signal is output. In Okamoto, since the radius of the CD is discriminated by determining whether focus control is performed or not, no cost-increasing extra part is necessary to detect the radius.

In contrast to Okamoto, claim 6 recites an apparatus for detecting an optical disc that is not just confined to an eight or twelve centimeter disc, but also fashion discs such as those shown in Figures 1B, 1C and 1D of the present application. The non-standard configuration of the fashion disc rotating at a high speed, i.e., the same speed of that for a standard disc, causes very serious noise and a failure of a lead-in operation is caused due to a focus drop or an adjustment failure. As such, the reproduction of the fashion disc may cause instability of a conventional optical disc reproducing apparatus.

In contrast to Okamoto, in the apparatus recited in claim 6, if the focus error signal is above a constant value, the optical disc is detected as a certain type and the operational speed level of the optical disc drive can be limited. The drive can store various parameters for driving various types of eight cm fashion discs, such as levels of rotation speed, balance, loop gain, etc. Since fashion discs having various shapes can be accurately detected and optimum driving conditions for the fashion discs, such as speeds, loop gains, etc., can be adequately set, it is possible to prevent conventional instability problems when reproducing fashion discs and, accordingly, customer satisfaction can be improved. In contrast to claim 6, Okamoto only discusses determining if a disc is an eight or twelve cm disc and makes no further discrimination regarding fashion discs using a focus error signal as recited in claim 6. In Okamoto, the only determination is if a focus control is performed or not.

Claims 7-10 depend on claim 6 and therefore believed to be allowable for the foregoing reasons. Further, claims 7-10 recite features that patentably distinguish over Okamoto. For

example, claim 10 recites that the third disc detection unit detects the optical disc as a certain optical disc predetermined as a fashion disc having a diameter of 8 cm if the measured focus error is below the constant value and as a standard disc having a diameter of 12 cm on which data is partially recorded if the measured focus error is above the constant value.

Withdrawal of the foregoing rejection is requested.

Claims 11-13

Claims 11-13 have been cancelled.

Claim 18

Claim 18 recites: "...identifying the optical disc as a non-standard size and limiting the operational speed level of the optical disc drive if the measured focus error is above a constant value..." Similar to the argument for claim 1, in contrast to claim 18, Okamoto only discusses determining if a disc is an eight or twelve cm disc and makes no further discrimination regarding non-standard discs using a focus error signal as recited in claim 18.

Withdrawal of the foregoing rejection is requested.

Claims 24-29

Claims 24-29 have been cancelled.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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